EG&G ROCKY FLATS

EXCAVATION PERMIT

1. SCOPE

This practice addresses the responsibilities and required activities for proper use of the Excavation Permit (see Figure HSP 6.01-1) in order to ensure that any excavation is made in a safe and proper manner and that required review by all responsible personnel is documented.

2. APPLICATION

The provisions of this practice apply to all excavations at Rocky Flats Plant, with the exception of emergencies. In the case of an emergency, work may be started without an Excavation Permit with the approval of the Shift Superintendent. This work shall be documented and coordinated in the same manner as for a routine Excavation Permit, by the function performing the work, and a formal Excavation Permit request shall be initiated within 24 hours after the beginning of the emergency.

3. DEFINITIONS

Permit Requester

Any responsible user who initiates an Excavation Permit (RF 46635) request.

Job Supervisor

Operative manager of personnel who dig the excavation and shore, as required.

Solid Waste Management Unit (SWMU)

An inactive waste disposal area as defined in the Resource Conservation and Recovery Act (RCRA). These areas represent known and unknown hazards to human health and the environment.

REVIEWED FOR CLASSIFICATION/UCNI
By [signature] (UNH)
Date 11/11/91

ADMIN RECORD

A-SW-000119

ATTACHMENT CMIC-15a

ROCKY FLATS EXCAVATION PERMIT

12/13/1988

LOCATION/PROJECT TITLE/WORK DESCRIPTION: _____

_____

CONTRACTOR: _____ CONTRACT DWG/SHEET NO: _____

AUTHORIZATION NO: _____ PERMIT NO: _____ DRAWING NO: _____

CAUTIONS/OBSTRUCTIONS/SPECIAL INSTRUCTIONS: _____

_____

_____

_____

LOCATOR TAPE ISSUED: _____ PERMIT LIMITS (DURATION/BOUNDARY) _____

RADIATION MONITORING SURVEY/RESULTS: _____

APPROVALS

RCRA: _____

FE(PCSE)	PLANT POWER	UTILITIES	ALARMS SUP.	TELECOM	COMM SUP.	PLANT PROTECTION

FIRE DEPT	ENVIRONMENTAL	LIQUID WASTE	IND. SAFETY	BUILDING SUPERINTENDENT	INDUSTRIAL HYGIENE	HSE AREA ENGR / SHIFT SUPER

RESPONSIBLE JOB SUPERVISOR: _____

OPERATOR: _____

EXCAVATION COORDINATOR: _____ DATE: _____

INITIAL INSPECTION
BY:
DATE:

DAILY
INITIALS: ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
DATE: ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

NOTES:

ATTACH DRAWING/SKETCH
SEE REVERSE SIDE FOR ADDITIONAL INSTRUCTIONS

DISTRIBUTION:
WHITE: C.M.I.C. FILE
BLUE: FE (PCSE)
YELLOW: HS&E
CARD: JOB SITE

SF 66555 (Rev. 7/89) Supersedes Previous Issues

Figure HSP 6.01-1. Excavation Permit

4. RESPONSIBILITIES

4.1 Job Supervisor/Construction Management (CM) Excavation Coordinator

The Job Supervisor/CM Excavation Coordinator is responsible for the following:

- Ensuring that a properly completed Excavation Permit is issued prior to the start of any excavation, or driving of rods deeper than two feet.
- Obtaining Excavation Permits for Contractors.
- Performing daily inspections of all plantsite excavations in process.
- Performing pre-entry inspections of excavations which require shoring or other means of protection.
- Reviewing the map of SWMUs provided by Environmental Restoration. Locations of SWMUs are to be considered approximate and caution should be used when excavating near a unit.
- Submitting a sketch of drawing(s) depicting the excavation site, along with the Excavation Permit request to Facilities Engineering (PCSE) for approval. The drawing(s) shall remain with the Excavation Permit request through the review and approval process.

4.2 H&S Area Engineer

The H&S Area Engineer is responsible for the following:

- Setting the limits of the Excavation Permit, using input from permit-coordinating activities.
- Determining the review/signature requirements for the Excavation Permit.
- Determining, and indicating on the Excavation Permit, whether a survey by Radiological Operations is required.

4.3 Facilities Engineering/Plant Civil Structural Engineering (PCSE)

Facilities Engineering/PCSE is responsible for the following:

- Reviewing and dispositioning the Excavation Permit request and its accompanying documentation.
- Assigning the Excavation Permit request a control number and providing the permit requester and CM Excavation Coordinator with an updated Site Utility Drawing or sketch of the area.
- Accompanying the permit requester, CM Excavation Coordinator, and operator(s) on a walk-through of the worksite to:
  1) Visually inspect for obvious obstructions.
  2) Discuss methods of execution.
  3) Locate utilities by painting or staking their location.

4.4 Environmental Restoration

Environmental Restoration is responsible for reviewing and approving excavations in any SWMU.

5. WORK PRACTICES

5.1 Submitting the Excavation Permit Request

The Job Supervisor or CM Excavation Coordinator shall submit with the Excavation Permit request a sketch or drawing(s) depicting the excavation site to Facilities Engineering/PCSE for approval.

5.2 Notifications

5.2.1 Job Supervisor

The Job Supervisor/CM Excavation Coordinator must be notified, at least 72 hours in advance, of all excavations prior to the start of the job.

5.2.2 Fire Department

Notify the Fire Department for either of the following:

- If excavations are expected to be deeper than nine feet (X4336).
- In the event of fire, cave-in or medical emergency (X2911).

5.2.3 Solid Waste Management Unit (SWMU) Notifications

See Paragraph 5.4.6 for SWMU notifications.

5.3 Personal Protective Equipment

Required personal protective equipment shall be identified on the H&S Work Permit, per HSP 6.05, "Radiological/H&S Work Permits."

5.4 Preplanning

5.4.1 **Minimum Distance for Spoil Placement**

The spoil from any excavation shall be placed a minimum of four feet from at least one side of the excavation lip. This will allow a clear area for rescue equipment.

5.4.2 **Excavating Near Security Fences**

When an excavation will be near or pass under a security fence, prior notification must be given to Plant Protection. This shall ensure that appropriate security is maintained at all times.

5.4.3 **Providing Safe Access/Egress to/from Excavations Deeper than 4-Feet**

Make adequate provision for safe access to and egress from any excavation deeper than four feet. Ladders shall be placed to limit travel distance to a maximum of 25 feet. Use ladders of sufficient length to extend from the bottom of the trench to at least 3 feet above the surface of the ground.

5.4.4 **Reviewing Drawings/Sketches**

Review reference drawings and/or sketches provided by PCSE. Depth and locations of obstructions listed or indicated on reference drawings issued in conjunction with the permit are to be considered approximate.

5.4.5 **Excavating Near Known Obstructions**

Excavation should be done with extreme caution when performed within 3 feet (horizontal and vertical) of any known obstruction. Exploration to determine the exact location and depth shall be performed near existing utilities by probing or by digging with hand-held shovels.

5.4.6 Excavating in SWMUs

Read the description of the SWMU unit to obtain information on known or potential site hazards.

1) For Non-Emergency Immediate Need Excavation in SWMUs

Notify Environmental Restoration, Industrial Hygiene, and Radiological Operations of the area and need as soon as possible. These groups shall determine appropriate worker and environmental safety precautions.

2) For Emergency Excavation in SWMUs

Follow procedures for workers and environmental safety, as provided by Industrial Hygiene and Radiological Operations. Notify the Shift Superintendent.

5.4.7 **Excavating With Heavy Equipment**

When excavation is being performed with heavy equipment, a second person, in addition to the operator, shall be stationed within viewing distance of the excavation to visually verify any unusual changes in excavation material such as clay to sand, concrete, locator tape, etc.

5.4.8 **When Utility Line Burial is Involved**

If utility line burial is involved, a metallic-backed, orange-colored locator tape shall be installed with the utility line, in accordance with Facilities Engineering requirements.

5.4.9 **Noting Existing Utilities on the Site Utility Drawing**

As work progresses, the CM Excavation Coordinator shall note the location of existing utilities on the Site Utility Drawing(s), and whether that location differs from the drawing. All new utilities shall be annotated on the drawing.

5.4.10 **Encountering Unusual Substances**

If any unusual substances, odors, liquids or materials are encountered during excavation, notification shall be made to Environmental Restoration, Industrial Hygiene, and Radiological Operations.

5.4.11 **Protecting or Barricading the Excavation**

Adequately protect or barricade the excavation at all times. Protection consists of physical barriers, such as covers, fencing, planking, railing and warning/caution signs and lights.

5.4.12 Working Near Loads or Earthmoving Equipment

Do not work under or near loads, or earthmoving equipment.

5.5 Special Assistance

5.5.1 Encountering Buried Objects or Suspect Liquids

Obtain Radiological Operations, Environmental Restoration, and Industrial Hygiene assistance if any buried objects or liquid from possible broken or leaking buried lines are encountered.

5.5.2 Encountering Unidentified Obstructions

When unidentified obstructions are encountered, immediately stop the excavation work and notify the responsible Job Supervisor or CM Excavation Coordinator to request assistance from Facilities Engineering (PCSE) to identify the obstructions. PCSE shall use this input to update the Master Site Utility Drawings.

6. SHORING REQUIREMENTS

6.1 Concurrence with OSHA Standard

Shoring requirements shall concur with OSHA 29 CFR 1926.

6.2 Shoring and Shaping

Unless the excavation is in solid rock, shore the sides of all excavations five feet or more deep, or shape to the proper angle of repose at any location where personnel entry is required.

6.3 Specification

The length of the shored or shaped work location must include the effective work zone, plus a safety zone equal in length to the depth of the trench on either side of the work zone. A trench shield may also be used when appropriate (see Figures HSP 6.01-2 and HSP 6.01-3).

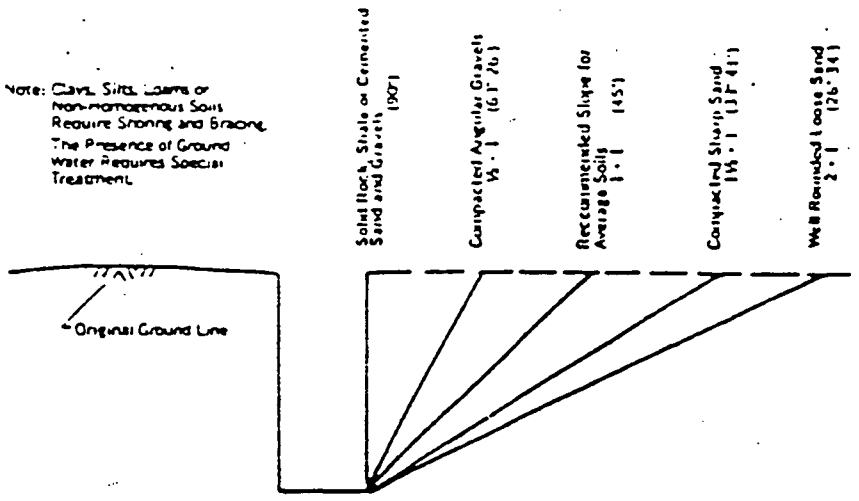

Figure HSP 6.01-2. Approximate Angle of Repose for Sloping of Sides of Excavations

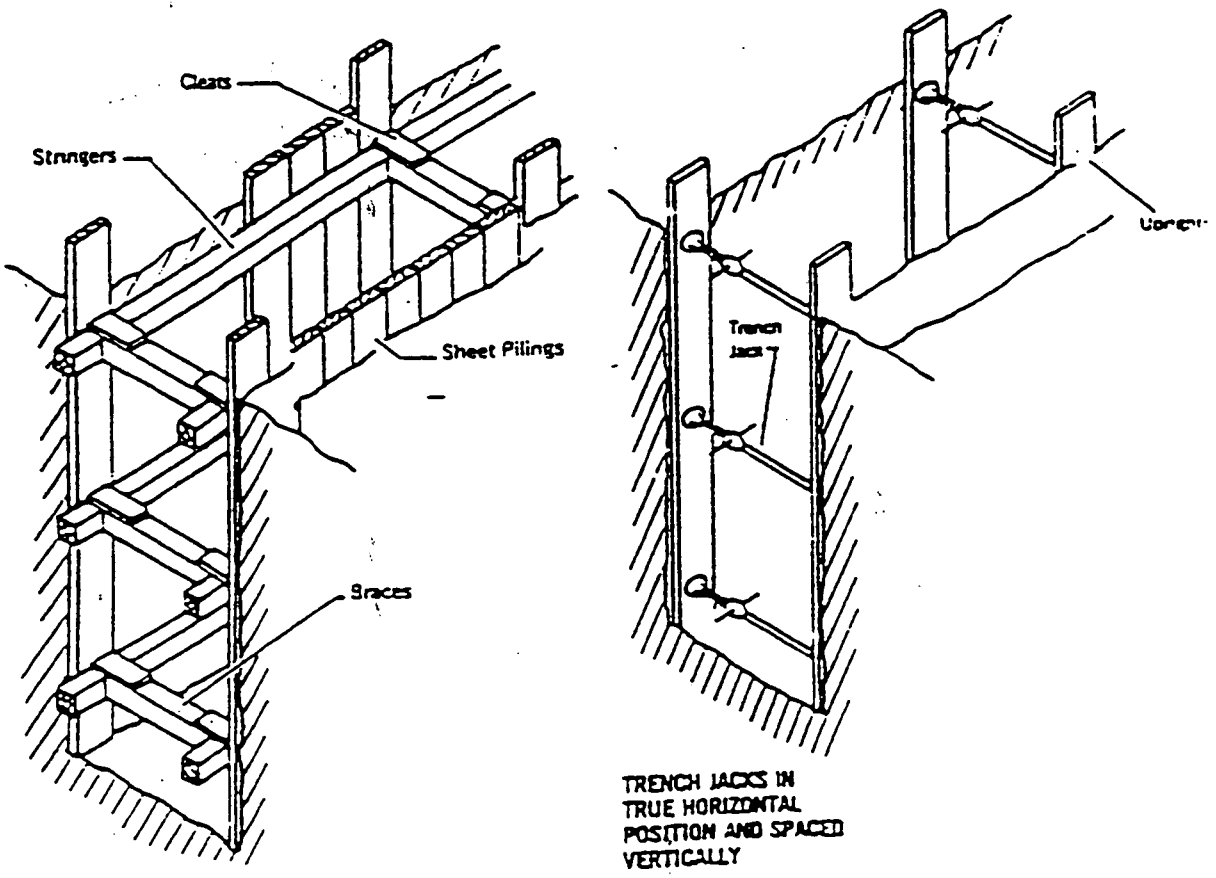

Figure HSP 6.01-3. One Example of Several Types of Sheeting

6.3.1 Use of Trench Jacks

Instead of wooden timbers, trench jacks may be used for shoring if they are used in accordance with the manufacturer's capacity specifications.

6.3.2 Plywood or Wooden Sheeting

Plywood or other wooden sheeting shall not be less than 3/4 inch; piling or shoring shall not be less than necessary to support the side of the excavation. For additional information, see OSHA 29 CFR 1926, Subpart P, Table P-2.

6.3.3 Use of Prefabricated Moveable Trench Shield

Use of a prefabricated moveable trench shield may be substituted for shoring, if the specific application is approved by the H&S Area Engineer or the CM Excavation Coordinator.

6.4 Shoring an Entire Excavation

If the entire excavation is to be shored, shore the excavation as the digging proceeds. Place the shoring as close to the end of the excavation as the excavating equipment shall permit. Install shoring from the top down; remove shoring from the bottom up.

6.5 Inspection Frequency and Protection Levels

Inspect all excavations daily and especially after storms or other hazard-increasing occurrences; increase the protection against slides and cave-ins, as required.

6.6 Inspection and Approvals Prior to Personnel Entry

Prior to the initial entry by personnel into a shored excavation, the CM Excavation Coordinator, a representative from Occupational Safety, and the H&S Area Engineer must inspect the shoring and shoring technique and sign off on the posted copy of the Excavation Permit. If there is a change to the excavation or shoring configuration as the job progresses, this inspection must be redone.

6.7 Updating the Drawing When Required

Upon job completion, the CM Excavation Coordinator shall provide the updated drawing, marked with horizontal and vertical coordinates locating the line(s). PCSE shall, in turn, update the Master Site Utility Drawing. If difficulty is encountered in locating the XYZ coordinates, the CM Excavation Coordinator shall contact PCSE for assistance.

6.8 Additional Information

For additional information on safety for excavations and trenches, see OSHA 29 CFR 1926.

7. FORMS

RF 13010, "Work Permit"

RF 46635, "Excavation Permit"

8. REFERENCES

OSHA 29 CFR 1926, "Construction Industry Standards"

HSP 6.05, "Radiological/H&S Work Permit"

RFP Inactive Waste Units, Reference: May, Chen and Associates

CONCURRING SIGNATURES:

J. L. Alvarez — 7-20-89
J. L. Alvarez — Date
Plant Health Physicist

J. L. Hebert — 7/21/89
J. L. Hebert — Date
Manager, Facilities Project Management

T. F. Lewis — 7/25/89
T. F. Lewis — Date
Manager, Industrial Hygiene

S. A. Marshall — 7/20/89
S. A. Marshall — Date
Manager, Construction Management

K. B. McKinley — 7/18/89
K. B. McKinley — Date
Manager, RCRA/CERLA Program

F.P. McMenus — 7/18/89
F.P. McMenus — Date
Manager, Liquid Waste Management

K. F. Miller — 7/18/89
K. F. Miller — Date
Manager, Fire Department

R. L. Newby — 7/20/89
R. L. Newby — Date
Manager, Plant Protection

G. H. Setlock — 7/26/89
G. H. Setlock — Date
Manager, Environmental/Health Programs

J. D. Weaver — 7/14/89
J. D. Weaver — Date
Manager, HS&E Area Management